

**Draft Proposed Stormwater Regulations for Part I and II**  
July 11, 2008

**CHAPTER 60**  
**VIRGINIA STORMWATER MANAGEMENT PROGRAM**  
**(VSMP) PERMIT REGULATIONS**

**Part I**

**4VAC50-60-10. Definitions.**

The following words and terms used in this chapter have the following meanings unless the context clearly indicates otherwise.

"Adequate channel" means a ~~channel~~ watercourse or wetland that will convey the designated frequency storm event without overtopping ~~the channel bank nor its banks~~ or causing erosive damage to the ~~channel bed, or banks~~ or overbank sections of the same.

"Administrator" means the Administrator of the United States Environmental Protection Agency or an authorized representative.

"Applicable standards and limitations" means all state, interstate, and federal standards and limitations to which a discharge or a related activity is subject under the Clean Water Act (CWA) (33 USC §1251 et seq.) and the Act, including effluent limitations, water quality standards, standards of performance, toxic effluent standards or prohibitions, best management practices, and standards for sewage sludge use or disposal under §§301, 302, 303, 304, 306, 307, 308, 403 and 405 of CWA.

"Approval authority" means the Virginia Soil and Water Conservation Board or their designee.

"Approved program" or "approved state" means a state or interstate program that has been approved or authorized by EPA under 40 CFR Part 123 (2000).

~~"Aquatic bench" means a 10- to 15-foot wide bench around the inside perimeter of a permanent pool that ranges in depth from zero to 12 inches. Vegetated with emergent plants, the bench augments pollutant removal, provides habitats, conceals trash and water level fluctuations, and enhances safety.~~

~~"Average land cover condition" means a measure of the average amount of impervious surfaces within a watershed, assumed to be 16%. Note that a locality may opt to calculate actual watershed-specific values for the average land cover condition based upon 4VAC50-60-110.~~

"Average monthly discharge limitation" means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

"Average weekly discharge limitation" means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

"Best management practice ~~(BMP)~~" or "BMP" means schedules of activities, prohibitions of practices, including both a structural or nonstructural practice, maintenance procedures, and other management practices to prevent or reduce the pollution of surface waters and groundwater systems from the impacts of land-disturbing activities. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

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~~"Bioretention basin" means a water quality BMP engineered to filter the water quality volume through an engineered planting bed, consisting of a vegetated surface layer (vegetation, mulch, ground cover), planting soil, and sand bed, and into the in situ material.~~

~~"Bioretention filter" means a bioretention basin with the addition of a sand filter collector pipe system beneath the planting bed.~~

"Board" means the Virginia Soil and Water Conservation Board.

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

"Channel" means a natural stream or manmade waterway watercourse with defined bed and banks that conducts continuously or periodically flowing water.

~~"Constructed wetlands" means areas intentionally designed and created to emulate the water quality improvement function of wetlands for the primary purpose of removing pollutants from stormwater.~~

"Comprehensive stormwater management plan" means a plan, which may be integrated with other land use plans or regulations, that specifies how the water quality and quantity components of stormwater are to be managed on the basis of an entire watershed or a portion thereof. The plan may also provide for the remediation of erosion, flooding, and water quality and quantity problems caused by prior development.

"Construction activity" means any clearing, grading, or excavation associated with large construction activity or associated with small construction activity.

"Contiguous zone" means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone (37 FR 11906).

"Continuous discharge" means a discharge which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

"Control measure" means any best management practice or other method used to prevent or reduce the discharge of pollutants to surface waters.

"Co-operator" means an operator to a VSMP permit that is only responsible for permit conditions relating to the discharge for which it is the operator.

"Clean Water Act" or "CWA" means the federal Clean Water Act (33 USC §1251 et seq.), formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972, Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483, and Public Law 97-117, or any subsequent revisions thereto.

"CWA and regulations" means the Clean Water Act (CWA) and applicable regulations published in the Code of Federal Regulations (CFR) promulgated thereunder. For the purposes of this chapter, it includes state program requirements.

"Daily discharge" means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.

"Department" means the Department of Conservation and Recreation.

~~"Development" means a tract of land developed or to be developed as a unit under single ownership or unified control which is to be used for any business or industrial purpose or is to~~

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~~contain three or more residential dwelling units~~ land disturbance and the resulting landform associated with the construction of residential, commercial, industrial, institutional, recreation, transportation or utility facilities or structures.

"Direct discharge" means the discharge of a pollutant.

"Director" means the Director of the Department of Conservation and Recreation or his designee.

"Discharge," when used without qualification, means the discharge of a pollutant.

"Discharge of a pollutant" means:

1. Any addition of any pollutant or combination of pollutants to surface waters from any point source; or

2. Any addition of any pollutant or combination of pollutants to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation.

This definition includes additions of pollutants into surface waters from: surface runoff that is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a state, municipality, or other person that do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any indirect discharger.

"Discharge Monitoring Report" or "DMR" means the form supplied by the department, or an equivalent form developed by the operator and approved by the board, for the reporting of self-monitoring results by operators.

"Draft permit" means a document indicating the board's tentative decision to issue or deny, modify, revoke and reissue, terminate, or reissue a permit. A notice of intent to terminate a permit, and a notice of intent to deny a permit are types of draft permits. A denial of a request for modification, revocation and reissuance, or termination is not a draft permit. A proposed permit is not a draft permit.

"Drainage area" means a land and water area on a land disturbing site from which runoff flows to a common outlet point.

"Effluent limitation" means any restriction imposed by the board on quantities, discharge rates, and concentrations of pollutants which are discharged from point sources into surface waters, the waters of the contiguous zone, or the ocean.

"Effluent limitations guidelines" means a regulation published by the administrator under §304(b) of the CWA to adopt or revise effluent limitations.

"Environmental Protection Agency (~~EPA~~)" or "EPA" means the United States Environmental Protection Agency.

"Event mean concentration" or "EMC" means the total mass load of a pollutant parameter divided by the total runoff water volume discharged during an individual storm event.

"Existing permit" means for the purposes of this chapter a permit issued by the permit-issuing authority and currently held by a permit applicant.

"Existing source" means any source that is not a new source or a new discharger.

"Facilities or equipment" means buildings, structures, process or production equipment or machinery that form a permanent part of a new source and that will be used in its operation, if these facilities or equipment are of such value as to represent a substantial commitment to construct. It excludes facilities or equipment used in connection with feasibility, engineering, and design studies regarding the new source or water pollution treatment for the new source.

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"Facility or activity" means any VSMP point source or treatment works treating domestic sewage or any other facility or activity (including land or appurtenances thereto) that is subject to regulation under the VSMP ~~program~~.

"Flood fringe" is the portion of the floodplain outside of the floodway, usually associated with standing rather than flowing water, which is covered by floodwater during the 100-year discharge.

"Flooding" means a volume of water that is too great to be confined within the banks or walls of the stream, water body, or conveyance system and that overflows onto adjacent lands, thereby causing or threatening damage.

"Floodplain" means any land area susceptible to being inundated by water from any source. It includes the floodway and flood-fringe areas.

"Floodway" means the channel of a river or other watercourse and the adjacent land areas, usually associated with flowing water, that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than one foot or as otherwise designated by the Federal Emergency Management Agency.

"General permit" means a VSMP permit authorizing a category of discharges under the CWA and the Act within a geographical area.

~~"Grassed swale" means an earthen conveyance system which is broad and shallow with erosion resistant grasses and check dams, engineered to remove pollutants from stormwater runoff by filtration through grass and infiltration into the soil.~~

"Hazardous substance" means any substance designated under the Code of Virginia and 40 CFR Part 116 (2000) pursuant to §311 of the CWA.

"Hydrologic Unit Code" or "HUC" means a watershed unit established in the most recent version of Virginia's 6<sup>th</sup> Order National Watershed Boundary Dataset.

"Illicit discharge" means any discharge to a municipal separate storm sewer that is not composed entirely of stormwater, except discharges pursuant to a VPDES or VSMP permit (other than the VSMP permit for discharges from the municipal separate storm sewer), discharges resulting from fire fighting activities, and discharges identified by and in compliance with 4VAC50-60-1220 C 2.

"Impervious cover" means a surface composed of any material that significantly impedes or prevents natural infiltration of water into soil. Impervious surfaces include, but are not limited to, roofs, buildings, streets, parking areas, and any conventional concrete, asphalt, or compacted gravel surface.

"Incorporated place" means a city, town, township, or village that is incorporated under the Code of Virginia.

"Indian country" means (i) all land within the limits of any Indian reservation under the jurisdiction of the United States government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation; (ii) all dependent Indian communities with the borders of the United States whether within the originally or subsequently acquired territory thereof, and whether within or without the limits of a state; and (iii) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

"Indirect discharger" means a nondomestic discharger introducing "pollutants" to a "publicly owned treatment works (POTW)".

~~"Infiltration facility" means a stormwater management facility that temporarily impounds runoff and discharges it via infiltration through the surrounding soil. While an infiltration facility~~

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~~may also be equipped with an outlet structure to discharge impounded runoff, such discharge is normally reserved for overflow and other emergency conditions. Since an infiltration facility impounds runoff only temporarily, it is normally dry during nonrainfall periods. Infiltration basin, infiltration trench, infiltration dry well, and porous pavement shall be considered infiltration facilities.~~

"Inspection" means an on-site review of the project's compliance with the permit, the local stormwater management program, and any applicable design criteria, or an on-site review to obtain information or conduct surveys or investigations necessary in the enforcement of the Act and this chapter.

"Interstate agency" means an agency of two or more states established by or under an agreement or compact approved by Congress, or any other agency of two or more states having substantial powers or duties pertaining to the control of pollution as determined and approved by the administrator under the CWA and regulations.

"Karst features" means sinkholes, sinking and losing streams, caves, large flow springs, and other such landscape features found in karst areas.

"Land disturbance" or "land-disturbing activity" means a manmade change to the land surface that potentially changes its runoff characteristics including any clearing, grading, or excavation associated with a construction activity regulated pursuant to the federal Clean Water Act, the Act, and this chapter.

"Large construction activity" means construction activity including clearing, grading and excavation, except operations that result in the disturbance of less than five acres of total land area. Large construction activity also includes the disturbance of less than five acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb five acres or more.

"Large municipal separate storm sewer system" means all municipal separate storm sewers that are either:

1. Located in an incorporated place with a population of 250,000 or more as determined by the 1990 decennial census by the Bureau of Census (40 CFR Part 122 Appendix F (2000));
2. Located in the counties listed in 40 CFR Part 122 Appendix H (2000), except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties;
3. Owned or operated by a municipality other than those described in subdivision 1 or 2 of this definition and that are designated by the board as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under subdivision 1 or 2 of this definition. In making this determination the board may consider the following factors:
  - a. Physical interconnections between the municipal separate storm sewers;
  - b. The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in subdivision 1 of this definition;
  - c. The quantity and nature of pollutants discharged to surface waters;
  - d. The nature of the receiving waters; and
  - e. Other relevant factors.
4. The board may, upon petition, designate as a large municipal separate storm sewer system, municipal separate storm sewers located within the boundaries of a region defined by a stormwater management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one or more of the systems described in this definition.

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"Linear development project" means a land-disturbing activity that is linear in nature such as, but not limited to, (i) the construction of electric and telephone utility lines, and natural gas pipelines; (ii) construction of tracks, rights-of-way, bridges, communication facilities and other related structures of a railroad company; ~~and (iii) highway construction projects; and (iv)~~ construction of stormwater channels and stream restoration activities. Private subdivision roads or streets shall not be considered linear development projects.

"Local stormwater management program" or "local program" means ~~a statement of the various methods employed by a locality or the department to manage the quality and quantity of runoff resulting from land-disturbing activities and shall include such items as local ordinances, permit requirements, policies and guidelines, technical materials, plan review, inspection, enforcement, and evaluation consistent with the Act and this chapter. The ordinance shall include provisions to require the control of after-development stormwater runoff rate of flow, the proper maintenance of stormwater management facilities, and minimum administrative procedures.~~

"Locality" means a county, city, or town.

"Low Impact Development" or "LID" means a design strategy with the goal of maintaining or replicating the pre-development hydrologic regime through the use of design techniques to create a functionally equivalent hydrologic site design. Hydrologic functions of storage, infiltration and ground water recharge, as well as the volume and frequency of discharges are maintained through the use of integrated and distributed micro-scale stormwater retention and detention areas, reduction of impervious surfaces, and the lengthening of runoff flow paths and flow time. Other strategies include the preservation/protection of environmentally sensitive site features such as riparian buffers, wetlands, steep slopes, valuable (mature) trees, flood plains, woodlands, and highly permeable soils.

"Major facility" means any VSMP facility or activity classified as such by the regional administrator in conjunction with the board.

"Major modification" means, for the purposes of this chapter, the modification or amendment of an existing permit before its expiration that is not a minor modification as defined in this regulation.

"Major municipal separate storm sewer outfall (or major outfall)" means a municipal separate storm sewer outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than circular pipe which is associated with a drainage area of more than 50 acres); or for municipal separate storm sewers that receive stormwater from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), with an outfall that discharges from a single pipe with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of two acres or more).

~~"Manmade"~~ "Man-made" means constructed by man.

"Man-made stormwater conveyance system" means a pipe, ditch, vegetated swale, or other conveyance constructed by man.

"Maximum daily discharge limitation" means the highest allowable daily discharge.

"Maximum extent practicable" or "MEP" means the technology-based discharge standard for municipal separate storm sewer systems established by CWA §402(p). MEP is achieved, in part, by selecting and implementing effective structural and nonstructural best management practices (BMPs) and rejecting ineffective BMPs and replacing them with effective best management practices (BMPs). MEP is an iterative standard, which evolves over time as urban

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runoff management knowledge increases. As such, the operator's MS4 program must continually be assessed and modified to incorporate improved programs, control measures, BMPs, etc., to attain compliance with water quality standards.

"Medium municipal separate storm sewer system" means all municipal separate storm sewers that are either:

1. Located in an incorporated place with a population of 100,000 or more but less than 250,000 as determined by the 1990 decennial census by the Bureau of Census (40 CFR Part 122 Appendix G (2000));

2. Located in the counties listed in 40 CFR Part 122 Appendix I (2000), except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties;

3. Owned or operated by a municipality other than those described in subdivision 1 or 2 of this definition and that are designated by the board as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under subdivision 1 or 2 of this definition. In making this determination the board may consider the following factors:

a. Physical interconnections between the municipal separate storm sewers;

b. The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in subdivision 1 of this definition;

c. The quantity and nature of pollutants discharged to surface waters;

d. The nature of the receiving waters; or

e. Other relevant factors.

4. The board may, upon petition, designate as a medium municipal separate storm sewer system, municipal separate storm sewers located within the boundaries of a region defined by a stormwater management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one or more of the systems described in subdivisions 1, 2 and 3 of this definition.

"Minor modification" means, for the purposes of this chapter, minor modification or amendment of an existing permit before its expiration as specified in 4VAC50-60-640. Minor modification for the purposes of this chapter also means other modifications and amendments not requiring extensive review and evaluation including, but not limited to, changes in EPA promulgated test protocols, increasing monitoring frequency requirements, changes in sampling locations, and changes to compliance dates within the overall compliance schedules. A minor permit modification or amendment does not substantially alter permit conditions, substantially increase or decrease the amount of surface water impacts, increase the size of the operation, or reduce the capacity of the facility to protect human health or the environment.

"Municipal separate storm sewer" means a conveyance or system of conveyances otherwise known as a municipal separate storm sewer system, including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains:

1. Owned or operated by a federal, state, city, town, county, district, association, or other public body, created by or pursuant to state law, having jurisdiction or delegated authority for erosion and sediment control and stormwater management, or a designated and approved management agency under §208 of the CWA that discharges to surface waters;

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2. Designed or used for collecting or conveying stormwater;

3. That is not a combined sewer; and

4. That is not part of a publicly owned treatment works.

"Municipal separate storm sewer system" or "MS4" means all separate storm sewers that are defined as "large" or "medium" or "small" municipal separate storm sewer systems or designated under 4VAC50-60-380 A 1.

"Municipal Separate Storm Sewer System Management Program" or "MS4 Program" means a management program covering the duration of a permit for a municipal separate storm sewer system that includes a comprehensive planning process that involves public participation and intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable, to protect water quality, and to satisfy the appropriate water quality requirements of the CWA and regulations and the Virginia Stormwater Management Act and attendant regulations, using management practices, control techniques, and system, design and engineering methods, and such other provisions that are appropriate.

"Municipality" means a city, town, county, district, association, or other public body created by or under state law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under §208 of the CWA.

"National Pollutant Discharge Elimination System (~~NPDES~~)" or "NPDES" means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements under §§307, 402, 318, and 405 of the CWA. The term includes an approved program.

"Natural channel design concepts" means the utilization of engineering analysis and fluvial geomorphic processes to create, rehabilitate, restore, or stabilize an open conveyance system for the purpose of creating or recreating a stream that conveys its bankfull storm event within its banks and allows larger flows to access its bankfull bench and its floodplain.

"Natural stormwater conveyance system" means the main channel of a natural stream, in combination with the floodway and flood fringe.

"Natural stream" means a tidal or nontidal watercourse that is part of the natural topography. It usually maintains a continuous or seasonal flow during the year and is characterized as being irregular in cross-section with a meandering course. Constructed channels such as drainage ditches or swales shall not be considered natural streams.

"New discharger" means any building, structure, facility, or installation:

1. From which there is or may be a discharge of pollutants;

2. That did not commence the discharge of pollutants at a particular site prior to August 13, 1979;

3. Which is not a new source; and

4. Which has never received a finally effective VPDES or VSMP permit for discharges at that site.

This definition includes an indirect discharger that commences discharging into surface waters after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a site for which it does not have a permit; and any offshore or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979.

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"New permit" means, for the purposes of this chapter, a permit issued by the permit-issuing authority to a permit applicant that does not currently hold and has never held a permit of that type, for that activity, at that location.

"New source," means any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:

1. After promulgation of standards of performance under §306 of the CWA that are applicable to such source; or

2. After proposal of standards of performance in accordance with §306 of the CWA that are applicable to such source, but only if the standards are promulgated in accordance with §306 of the CWA within 120 days of their proposal.

"Nonpoint source pollution" means pollution such as sediment, nitrogen and phosphorous, hydrocarbons, heavy metals, and toxics whose sources cannot be pinpointed but rather are washed from the land surface in a diffuse manner by stormwater runoff.

"Nonpoint source pollutant runoff load" or "pollutant discharge" means the average amount of a particular pollutant measured in pounds per year or other standard reportable unit as appropriate, delivered in a diffuse manner by stormwater runoff.

"Operator" means the owner or operator of any facility or activity subject to regulation under the VSMP ~~program~~. In the context of stormwater associated with a large or small construction activity, operator means any person associated with a construction project that meets either of the following two criteria: (i) the person has direct operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications or (ii) the person has day-to-day operational control of those activities at a project that are necessary to ensure compliance with a stormwater pollution prevention plan for the site or other permit conditions (i.e., they are authorized to direct workers at a site to carry out activities required by the stormwater pollution prevention plan or comply with other permit conditions). In the context of stormwater discharges from Municipal Separate Storm Sewer Systems (MS4s), operator means the operator of the regulated MS4 system.

"Outfall" means, when used in reference to municipal separate storm sewers, a point source at the point where a municipal separate storm sewer discharges to surface waters and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other surface waters and are used to convey surface waters.

"Overburden" means any material of any nature, consolidated or unconsolidated, that overlies a mineral deposit, excluding topsoil or similar naturally occurring surface materials that are not disturbed by mining operations.

"Owner" means the Commonwealth or any of its political subdivisions including, but not limited to, sanitation district commissions and authorities, and any public or private institution, corporation, association, firm or company organized or existing under the laws of this or any other state or country, or any officer or agency of the United States, or any person or group of persons acting individually or as a group that owns, operates, charters, rents, or otherwise exercises control over or is responsible for any actual or potential discharge of sewage, industrial wastes, or other wastes to state waters, or any facility or operation that has the capability to alter the physical, chemical, or biological properties of state waters in contravention of §62.1-44.5 of the Code of Virginia, the Act and this chapter.

"Peak flow rate" means the maximum instantaneous flow from a prescribed design storm at a particular location.

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"Percent impervious" means the impervious area within the site divided by the area of the site multiplied by 100.

"Permit" means an approval issued by the permit-issuing authority for the initiation of a land-disturbing activity or for stormwater discharges from an MS4. Permit does not include any permit that has not yet been the subject of final permit-issuing authority action, such as a draft permit or a proposed permit.

"Permit-issuing authority" means the board, the department, or a locality with a qualifying local program ~~that is delegated authority authorized by the board to issue, deny, revoke, terminate, or amend stormwater permits under the provisions of the Act and this chapter.~~

"Permittee" means the person or locality to which the permit is issued, including any operator whose construction site is covered under a construction general permit.

"Person" means any individual, corporation, partnership, association, state, municipality, commission, or political subdivision of a state, governmental body (including but not limited to a federal, state, or local entity), any interstate body or any other legal entity.

"Planning area" means a ~~designated~~ portion of the parcel on which the land development project disturbing activity is located, as approved by the local program. Planning areas shall be ~~The planning area is established by delineation shall be delineated on a master comprehensive watershed stormwater management plan or stormwater management plan. Once established, planning areas shall be applied consistently for all future projects.~~

"Point of discharge" means a location at which stormwater runoff is released.

"Point source" means any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

"Pollutant" means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 USC §2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

1. Sewage from vessels; or

2. Water, gas, or other material that is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well if the well used either to facilitate production or for disposal purposes is approved by the board and if the board determines that the injection or disposal will not result in the degradation of ground or surface water resources.

"Pollution" means such alteration of the physical, chemical or biological properties of any state waters as will or is likely to create a nuisance or render such waters (a) harmful or detrimental or injurious to the public health, safety or welfare, or to the health of animals, fish or aquatic life; (b) unsuitable with reasonable treatment for use as present or possible future sources of public water supply; or (c) unsuitable for recreational, commercial, industrial, agricultural, or other reasonable uses, provided that (i) an alteration of the physical, chemical, or biological property of state waters, or a discharge or deposit of sewage, industrial wastes or other wastes to state waters by any owner which by itself is not sufficient to cause pollution, but which, in combination with such alteration of or discharge or deposit to state waters by other owners, is sufficient to cause pollution; (ii) the discharge of untreated sewage by any owner into state

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waters; and (iii) contributing to the contravention of standards of water quality duly established by the State Water Control Board, are "pollution" for the terms and purposes of this chapter.

"Post-development" refers to conditions that reasonably may be expected or anticipated to exist after completion of the land development activity on a specific site or tract of land.

"Pre-development" refers to the conditions that exist at the time that plans for the land development of a tract of land are approved by the plan approval authority. Where phased development or plan approval occurs (preliminary grading, roads and utilities, etc.), the existing conditions at the time prior to the first item being approved or permitted shall establish pre-development conditions.

"Prior developed lands" means land that has been previously disturbed for "development" as defined herein.

"Privately owned treatment works (~~PVOTW~~)" or "PVOTW" means any device or system that is (i) used to treat wastes from any facility whose operator is not the operator of the treatment works and (ii) not a POTW.

"Proposed permit" means a VSMP permit prepared after the close of the public comment period (and, when applicable, any public hearing and administrative appeals) that is sent to EPA for review before final issuance. A proposed permit is not a draft permit.

"Publicly owned treatment works (~~POTW~~)" or "POTW" means a treatment works as defined by §212 of the CWA that is owned by a state or municipality (as defined by §502(4) of the CWA). This definition includes any devices and systems used in the storage, treatment, recycling, and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes, and other conveyances only if they convey wastewater to a POTW treatment plant. The term also means the municipality as defined in §502(4) of the CWA, that has jurisdiction over the indirect discharges to and the discharges from such a treatment works.

"Qualified personnel" means a licensed professional engineer, responsible land disturber, or other knowledgeable person that holds a certificate of competency from the board in the area of project inspection or combined administrator.

"Qualifying local stormwater management program" or "qualifying local program" means a local program that is administered by a locality that has been authorized by the board to issue coverage under the VSMP General Permit for Discharges of Stormwater from Construction Activities (4 VAC 50-60-1170).

"Recommencing discharger" means a source that recommences discharge after terminating operations.

"Regional administrator" means the Regional Administrator of Region III of the Environmental Protection Agency or the authorized representative of the regional administrator.

~~"Regional (watershed wide) stormwater management facility" or "regional facility" means a facility or series of facilities designed to control stormwater runoff from a specific watershed, although only portions of the watershed may experience land development.~~

~~"Regional (watershed wide) stormwater management plan" or "regional plan" means a document containing material describing how runoff from open space, existing development and future planned development areas within a watershed will be controlled by coordinated design and implementation of regional stormwater management facilities.~~

"Restored stormwater conveyance system" means a stormwater conveyance system that has been designed and constructed using natural channel design concepts, including the main channel, floodway, and flood fringe.

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"Revoked permit" means, for the purposes of this chapter, an existing permit that is terminated by the board before its expiration.

"Runoff coefficient" means the fraction of total rainfall that will appear at a conveyance as runoff.

"Runoff" or "stormwater runoff" means that portion of precipitation that is discharged across the land surface or through conveyances to one or more waterways.

"Runoff characteristics" include, but are not limited to velocity, peak flow rate, volume, time of concentration, and flow duration, and their influence on channel morphology including sinuosity, channel cross-sectional area, and channel slope.

"Runoff volume" means the volume of water that runs off the land development project from a prescribed design storm.

~~"Sand filter" means a contained bed of sand that acts to filter the first flush of runoff. The runoff is then collected beneath the sand bed and conveyed to an adequate discharge point or infiltrated into the in-situ soils.~~

"Schedule of compliance" means a schedule of remedial measures included in a permit, including an enforceable sequence of interim requirements (for example, actions, operations, or milestone events) leading to compliance with the Act, the CWA and regulations.

"Secretary" means the Secretary of the Army, acting through the Chief of Engineers.

"Severe property damage" means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

~~"Shallow marsh" means a zone within a stormwater extended detention basin that exists from the surface of the normal pool to a depth of six to 18 inches, and has a large surface area and, therefore, requires a reliable source of baseflow, groundwater supply, or a sizeable drainage area, to maintain the desired water surface elevations to support emergent vegetation.~~

"Significant materials" means, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under §101(14) of CERCLA (42 USC §9601(14)); any chemical the facility is required to report pursuant to §313 of Title III of SARA (42 USC §11023); fertilizers; pesticides; and waste products such as ashes, slag and sludge that have the potential to be released with stormwater discharges.

"Single jurisdiction" means, for the purposes of this chapter, a single county or city. The term county includes incorporated towns which are part of the county.

"Site" means the land or water area where any facility or activity is physically located or conducted, a parcel of land being developed, or a designated planning area in which the land development project is located.

"Site hydrology" means the movement of water on and off the site as determined by parameters including, but not limited to, soil types, soil permeability, vegetative cover, seasonal water tables, slopes, land cover, and impervious cover.

"Small construction activity" means:

1. Construction activities including clearing, grading, and excavating that results in land disturbance of equal to or greater than one acre, or equal to or greater than 2,500 square feet in all areas of the jurisdictions designated as subject to the Chesapeake Bay Preservation Area Designation and Management Regulations adopted pursuant to the Chesapeake Bay Preservation

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Act, and less than five acres. Small construction activity also includes the disturbance of less than one acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one and less than five acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. The board may waive the otherwise applicable requirements in a general permit for a stormwater discharge from construction activities that disturb less than five acres where stormwater controls are not needed based on a "total maximum daily load" (TMDL) approved or established by EPA that addresses the pollutant(s) of concern or, for nonimpaired waters that do not require TMDLs, an equivalent analysis that determines allocations for small construction sites for the pollutant(s) of concern or that determines that such allocations are not needed to protect water quality based on consideration of existing in-stream concentrations, expected growth in pollutant contributions from all sources, and a margin of safety. For the purpose of this subdivision, the pollutant(s) of concern include sediment or a parameter that addresses sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. The operator must certify to the board that the construction activity will take place, and stormwater discharges will occur, within the drainage area addressed by the TMDL or equivalent analysis.

2. Any other construction activity designated by the either the board or the EPA regional administrator, based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to surface waters.

"Small municipal separate storm sewer system" or "small MS4" means all separate storm sewers that are (i) owned or operated by the United States, a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under §208 of the CWA that discharges to surface waters and (ii) not defined as "large" or "medium" municipal separate storm sewer systems or designated under 4VAC50-60-380 A 1. This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highway and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

"Source" means any building, structure, facility, or installation from which there is or may be a discharge of pollutants.

"State" means the Commonwealth of Virginia.

"State/EPA agreement" means an agreement between the regional administrator and the state that coordinates EPA and state activities, responsibilities and programs including those under the CWA and the Act.

"State project" means any land development project that is undertaken by any state agency, board, commission, authority or any branch of state government, including state-supported institutions of higher learning.

"State Water Control Law" means Chapter 3.1 (§62.1-44.2 et seq.) of Title 62.1 of the Code of Virginia.

"State waters" means all water, on the surface and under the ground, wholly or partially within or bordering the Commonwealth or within its jurisdiction, including wetlands.

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"Stormwater" means precipitation that is discharged across the land surface or through conveyances to one or more waterways and that may include stormwater runoff, snow melt runoff, and surface runoff and drainage.

"Stormwater conveyance system" means any of the following, either within or downstream of the land disturbing activity: (1) a man-made stormwater conveyance system; (2) a natural stormwater conveyance system; (3) a restored stormwater conveyance system; or (4) other system as so defined by the local government.

~~"Stormwater detention basin" or "detention basin" means a stormwater management facility that temporarily impounds runoff and discharges it through a hydraulic outlet structure to a downstream conveyance system. While a certain amount of outflow may also occur via infiltration through the surrounding soil, such amounts are negligible when compared to the outlet structure discharge rates and are, therefore, not considered in the facility's design. Since a detention facility impounds runoff only temporarily, it is normally dry during nonrainfall periods.~~

"Stormwater discharge associated with construction activity" means a discharge of pollutants in stormwater runoff from areas where land-disturbing activities (e.g., clearing, grading, or excavation); construction materials or equipment storage or maintenance (e.g., fill piles, borrow area, concrete truck washout, fueling); or other industrial stormwater directly related to the construction process (e.g., concrete or asphalt batch plants) are located.

"Stormwater discharge associated with large construction activity" means the discharge of stormwater from large construction activities.

"Stormwater discharge associated with small construction activity" means the discharge of stormwater from small construction activities.

~~"Stormwater extended detention basin" or "extended detention basin" means a stormwater management facility that temporarily impounds runoff and discharges it through a hydraulic outlet structure over a specified period of time to a downstream conveyance system for the purpose of water quality enhancement or stream channel erosion control. While a certain amount of outflow may also occur via infiltration through the surrounding soil, such amounts are negligible when compared to the outlet structure discharge rates and, therefore, are not considered in the facility's design. Since an extended detention basin impounds runoff only temporarily, it is normally dry during nonrainfall periods.~~

~~"Stormwater extended detention basin enhanced" or "extended detention basin enhanced" means an extended detention basin modified to increase pollutant removal by providing a shallow marsh in the lower stage of the basin.~~

"Stormwater management facility" means a device that controls stormwater runoff and changes the characteristics of that runoff including, but not limited to, the quantity and quality, the period of release or the velocity of flow.

"Stormwater management plan" means a document(s) containing material for describing how existing runoff characteristics will be maintained by a land-disturbing activity and methods for complying with the requirements of the local program or this chapter.

"Stormwater Management Program" means a program established by a locality that is consistent with the requirements of the Virginia Stormwater Management Act, this chapter and associated guidance documents.

"Stormwater management standards" means the minimum criteria for stormwater management programs and land-disturbing activities as set out in Part II of these regulations.

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"Stormwater Pollution Prevention Plan" (SWPPP) or "~~plan~~ SWPPP" means a document that is prepared in accordance with good engineering practices and that identifies potential sources of pollution that may reasonably be expected to affect the quality of stormwater discharges from the construction site or its associated land-disturbing activities. In addition the document shall describe and ensure the implementation of best management practices, and shall include, but not be limited to the inclusion of, or the incorporation by reference of, an erosion and sediment control plan, a post-construction stormwater management plan, a spill prevention control and countermeasure (SPCC) plan, and other practices that will be used to reduce pollutants in stormwater discharges from land-disturbing activities and to assure compliance with the terms and conditions of this chapter. All plans incorporated by reference into the SWPPP shall be enforceable under the permit issued or general permit coverage authorized.

~~"Stormwater retention basin" or "retention basin" means a stormwater management facility that includes a permanent impoundment, or normal pool of water, for the purpose of enhancing water quality and, therefore, is normally wet, even during nonrainfall periods. Storm runoff inflows may be temporarily stored above this permanent impoundment for the purpose of reducing flooding, or stream channel erosion.~~

~~"Stormwater retention basin I" or "retention basin I" means a retention basin with the volume of the permanent pool equal to three times the water quality volume.~~

~~"Stormwater retention basin II" or "retention basin II" means a retention basin with the volume of the permanent pool equal to four times the water quality volume.~~

~~"Stormwater retention basin III" or "retention basin III" means a retention basin with the volume of the permanent pool equal to four times the water quality volume with the addition of an aquatic bench.~~

"Subdivision" means the same as defined in §15.2-2201 of the Code of Virginia.

"Surface waters" means:

1. All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;
2. All interstate waters, including interstate wetlands;
3. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:
  - a. That are or could be used by interstate or foreign travelers for recreational or other purposes;
  - b. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
  - c. That are used or could be used for industrial purposes by industries in interstate commerce.
4. All impoundments of waters otherwise defined as surface waters under this definition;
5. Tributaries of waters identified in subdivisions 1 through 4 of this definition;
6. The territorial sea; and
7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in subdivisions 1 through 6 of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA and the law, are not surface waters. Surface waters do not include

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prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other agency, for the purposes of the Clean Water Act, the final authority regarding the Clean Water Act jurisdiction remains with the EPA.

"Total dissolved solids" means the total dissolved (filterable) solids as determined by use of the method specified in 40 CFR Part 136 (2000).

"Total maximum daily load" or "TMDL" means the sum of the individual wasteload allocations for point sources, load allocations (LAs) for nonpoint sources, natural background loading and a margin of safety. TMDLs can be expressed in terms of either mass per time, toxicity, or other appropriate measure. The TMDL process provides for point versus nonpoint source trade-offs.

"Toxic pollutant" means any pollutant listed as toxic under §307(a)(1) of the CWA or, in the case of sludge use or disposal practices, any pollutant identified in regulations implementing §405(d) of the CWA.

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the operator. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

"Variance" means any mechanism or provision under §301 or §316 of the CWA or under 40 CFR Part 125 (2000), or in the applicable effluent limitations guidelines that allows modification to or waiver of the generally applicable effluent limitation requirements or time deadlines of the CWA. This includes provisions that allow the establishment of alternative limitations based on fundamentally different factors or on §301(c), §301(g), §301(h), §301(i), or §316(a) of the CWA.

~~"Vegetated filter strip" means a densely vegetated section of land engineered to accept runoff as overland sheet flow from upstream development. It shall adopt any natural vegetated form, from grassy meadow to small forest. The vegetative cover facilitates pollutant removal through filtration, sediment deposition, infiltration and absorption, and is dedicated for that purpose.~~

"Virginia Pollutant Discharge Elimination System (VPDES) permit" or "VPDES permit" means a document issued by the State Water Control Board pursuant to the State Water Control Law authorizing, under prescribed conditions, the potential or actual discharge of pollutants from a point source to surface waters and the use or disposal of sewage sludge.

"Virginia Stormwater Management Act" or "Act" means Article 1.1 (§ 10.1-603.1 et seq.) of Chapter 6 of Title 10.1 of the Code of Virginia.

"Virginia Stormwater BMP Clearinghouse website" means a website that contains detailed design standards and specifications for BMPs that may be used in Virginia to comply with requirements of the Virginia Stormwater Management Act and associated regulations and that is jointly created by the department and the Virginia Water Resources Research Center subject to advice from a permanent stakeholder advisory committee.

"Virginia Stormwater Management Handbook" means a collection of pertinent information that provides general guidance for compliance with the Virginia Stormwater Management Act and associated regulations and is developed by the department with advice from a stakeholder advisory committee.

"Virginia Stormwater Management Program (VSMP)" or "VSMP" means the Virginia program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing

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permits, and imposing and enforcing requirements pursuant to the federal Clean Water Act, the Virginia Stormwater Management Act, this chapter, and associated guidance documents.

"Virginia Stormwater Management Program (~~VSMP~~) permit" or "VSMP permit" means a document issued by the permit-issuing authority pursuant to the Virginia Stormwater Management Act and this chapter authorizing, under prescribed conditions, the potential or actual discharge of pollutants from a point source to surface waters. Under the approved state program, a VSMP permit is equivalent to a NPDES permit.

"VSMP application" or "application" means the standard form or forms, including any additions, revisions or modifications to the forms, approved by the administrator and the board for applying for a VSMP permit.

"Wasteload allocation" or "wasteload" or "WLA" means the portion of a receiving surface water's loading or assimilative capacity allocated to one of its existing or future point sources of pollution. WLAs are a type of water quality-based effluent limitation.

"Water quality standards" or "WQS" means provisions of state or federal law that consist of a designated use or uses for the waters of the Commonwealth and water quality criteria for such waters based on such uses. Water quality standards are to protect the public health or welfare, enhance the quality of water, and serve the purposes of the State Water Control Law (§62.1-44.2 et seq. of the Code of Virginia), the Virginia Stormwater Management Act (§10.1-603.1 et seq. of the Code of Virginia), and the federal Clean Water Act (33 USC §1251 et seq.).

"Water quality volume" means the volume equal to the first 1/2 inch of runoff multiplied by the impervious surface of the land development project.

"Watershed" means a defined land area drained by a river or stream, karst system, or system of connecting rivers or streams such that all surface water within the area flows through a single outlet. In karst areas, the karst feature to which the water drains may be considered the single outlet for the watershed.

"Wetlands" means those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

"Whole effluent toxicity" means the aggregate toxic effect of an effluent measured directly by a toxicity test.

### **4VAC50-60-20. Purposes.**

The purposes of this chapter are to provide a framework for the administration, implementation and enforcement of the Act and to delineate the procedures and requirements to be followed in connection with VSMP permits issued by the board or its designee pursuant to the Clean Water Act and the Virginia Stormwater Management Act, while at the same time providing flexibility for innovative solutions to stormwater management issues. The chapter also establishes the board's procedures for the authorization of a qualifying local program, board and department oversight authorities for an authorized qualifying local program, the board's procedures for utilization by the department in administering a local program in localities where no qualifying local program is authorized, and the components of a stormwater management program including but not limited to stormwater management standards.

### **4VAC50-60-30. Applicability.**

This chapter is applicable to:

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- 778           1. Every private, local, state, or federal entity that establishes a stormwater management  
779 program or a MS4 Program;  
780           2. The department in its oversight of locally administered programs or in its  
781 administration of a local program;  
782           ~~2.~~ 3. Every state agency project regulated under the Act and this chapter; and  
783           ~~3.~~ 4. Every land-disturbing activity regulated under § 10.1-603.8 of the Code of Virginia  
784 unless otherwise exempted in 10.1-603.8 subsection B.

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**Part II Stormwater Management Program Technical Criteria**

**4VAC50-60-40. Authority and applicability.**

~~This part specifies technical criteria for every stormwater management program and land-disturbing activity.~~

Pursuant to the Virginia Stormwater Management Act, § 10.1-603.2 et seq. of the Code of Virginia, the board is required to take actions ensuring the general health, safety and welfare of the citizens of the Commonwealth as well as protecting the quality and quantity of state waters from the potential harm of unmanaged stormwater. In addition to other authority granted to the board under the Stormwater Management Act, the board is authorized pursuant to §§ 10.1-603.2:1 and 10.1-603.4 to adopt regulations that specify minimum technical criteria for stormwater management programs in Virginia, to establish statewide standards for stormwater management from land disturbing activities, and to protect properties, the quality and quantity of state waters, the physical integrity of stream channels, and other natural resources.

In accordance with the board's authority, this part establishes the minimum technical criteria and stormwater management standards that shall be employed by a local or state-administered stormwater management program or state agency to protect the quality and quantity of state waters from the potential harm of unmanaged stormwater runoff resulting from land disturbing activities.

**4VAC50-60-50. General. Repeal**

**4VAC50-60-53. General Requirements**

The physical, chemical, biological and hydrologic characteristics and the water quality and quantity of the receiving state waters shall be maintained, protected, or improved. Objectives include, but are not limited to, supporting state designated uses and water quality standards. All control measures used shall be employed in a manner which minimizes impacts on receiving state waters.

**4VAC50-60-56. Applicability of other laws and regulations**

Land disturbing activities shall comply with all applicable laws and regulations related to stormwater management, including but not limited to the CWA, Virginia Stormwater Management Act, Virginia Erosion and Sediment Control Law and the Chesapeake Bay Preservation Act except as provided in § 10.1-603.3 subsection I and all applicable regulations adopted in accordance with those laws. Nothing in this chapter shall be construed as limiting the applicability of other laws and regulations or the rights of other federal agencies, state agencies, or local governments to impose more stringent technical criteria or other requirements as allowed by law.

**4VAC50-60-60. Water quality. Repeal**

**4VAC50-60-63. Water Quality Criteria Requirements**

A. In order to protect the quality of state waters and to control nonpoint source pollution, the following minimum technical criteria and statewide standards for stormwater management shall be applied to the site of a land disturbing activity. The local program shall have discretion

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to allow for application of the criteria to each drainage area of the site. However, where a site drains to more than one HUC, the pollutant load reduction requirements shall be applied independently within each HUC.

1. The total phosphorus load of new development projects shall not exceed 0.28 pounds per acre per year.

2. The total phosphorus load of projects occurring on prior developed lands that result in an impervious cover of a site being less than or equal to 40% shall not exceed 0.28 pounds per acre per year.

3. The total phosphorus load of projects occurring on prior developed lands that result in an impervious cover of a site being greater than 40% shall be reduced to an amount at least 10% below the pre-development total phosphorus load. However, under no circumstance shall the total phosphorus load be required to be reduced to below 0.28 pounds per acre per year.

4. Where the land disturbing activity only occurs on a portion of the development site, the local program has the discretion to review the stormwater management plan based upon the proposed limits of land disturbance for the project.

5. In addition to the above requirements, if a specific WLA for a pollutant has been established in a TMDL by the Commonwealth and approved by the EPA that would apply to stormwater discharges from a land disturbing activity, the necessary steps must be implemented to meet the WLA.

B. If a comprehensive watershed stormwater management plan has been adopted pursuant to 4VAC50-60-96 for the watershed within which a project is located, then the local program may allow off-site controls in accordance with the plan to achieve the post-development pollutant load water quality technical criteria set out in subsection A. Such off-site controls shall achieve the required pollutant reductions either completely off-site in accordance with the plan or in a combination of on-site and off-site controls. In either case, such controls shall be within the same HUC or the adjacent downstream HUC or within HUCs approved by the board.

C. Where no plan exists pursuant to subsection B, off-site controls may be used to meet the post-development pollutant load water quality technical criteria set out in subsection A provided:

1. The local program allows for off-site controls;

2. The applicant demonstrates to the satisfaction of the local program that off-site reductions equal to or greater than those that would otherwise be required for the site are achieved;

3. The development's runoff will not result in flooding or channel erosion impacts downstream of the site or any off-site treatment area and shall be controlled in accordance with 4VAC50-60-66;

4. Off-site controls must be located within the same HUC or the adjacent downstream HUC to the land disturbing site; and

5. The right to utilize the off-site control area has been obtained and maintenance agreements for the stormwater management facilities have been established pursuant to 4VAC50-60-108.

Alternatively, the local program may choose to implement the provisions of this subsection through an exception granted pursuant to 4VAC50-60-122 in order to implement off-site treatment.

### **4VAC50-60-65. Water Quality Compliance**

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A. Compliance with the water quality criteria set out in 4VAC 50-60-63 subsection A shall be determined by utilizing the Pollutant - Runoff Reduction Spreadsheet contained within the Virginia Stormwater Management Handbook or another methodology that is demonstrated to achieve equivalent results and is approved by the board.

B. The BMPs listed in Table 1 or the BMPs available on the Virginia Stormwater BMP Clearinghouse website shall be utilized to effectively reduce the pollutant load in accordance with the Pollutant-Runoff Reduction Spreadsheet.

C. BMPs differing from those listed in Table 1 shall be reviewed and approved in accordance with procedures that have been established by the BMP Clearinghouse Committee and have been set out in Board approved guidance. Such BMPs shall be incorporated into the Pollutant-Runoff Reduction Spreadsheet upon approval for general use.

Table 1  
BMP Pollutant Removal Efficiencies

<u>Practice</u>	<u>Phosphorus Removal by Runoff Volume Reduction (RR, as %)</u>	<u>Phosphorus Removal by Treatment -- Pollutant Concentration Reduction (PR, as %)</u>	<u>Total Phosphorus Removal (TR, as %)</u>
<u>Green Roof 1</u>	<u>45</u>	<u>0</u>	<u>45</u>
<u>Green Roof 2</u>	<u>60</u>	<u>0</u>	<u>60</u>
<u>Rooftop Disconnection 1</u>	<u>25</u>	<u>15</u>	<u>36</u>
<u>Rooftop Disconnection 2</u>	<u>50</u>	<u>15</u>	<u>58</u>
<u>Rain Tanks/Cisterns</u>	<u>40</u>	<u>0</u>	<u>40</u>
<u>Soil Amendments 1</u>	<u>50</u>	<u>0</u>	<u>50</u>
<u>Soil Amendments 2</u>	<u>75</u>	<u>0</u>	<u>75</u>
<u>Pervious Parking 1</u>	<u>45</u>	<u>25</u>	<u>59</u>
<u>Pervious Parking 2</u>	<u>75</u>	<u>25</u>	<u>81</u>
<u>Grass Channel 1</u>	<u>10</u>	<u>15</u>	<u>23</u>
<u>Grass Channel 2</u>	<u>20</u>	<u>15</u>	<u>32</u>
<u>Bioretention 1</u>	<u>40</u>	<u>25</u>	<u>55</u>
<u>Bioretention 2</u>	<u>80</u>	<u>50</u>	<u>90</u>
<u>Infiltration 1</u>	<u>50</u>	<u>25</u>	<u>63</u>
<u>Infiltration 2</u>	<u>90</u>	<u>25</u>	<u>93</u>
<u>Dry Swale 1</u>	<u>40</u>	<u>20</u>	<u>52</u>
<u>Dry Swale 2</u>	<u>60</u>	<u>40</u>	<u>76</u>
<u>Wet Swale 1</u>	<u>0</u>	<u>20</u>	<u>20</u>
<u>Wet Swale 2</u>	<u>0</u>	<u>40</u>	<u>40</u>
<u>Extended Detention Pond 1</u>	<u>0</u>	<u>15</u>	<u>15</u>
<u>Extended Detention Pond 2</u>	<u>15</u>	<u>15</u>	<u>28</u>
<u>Filtering Practice 1</u>	<u>0</u>	<u>60</u>	<u>60</u>
<u>Filtering Practice 2</u>	<u>0</u>	<u>65</u>	<u>65</u>
<u>Constructed Wetland 1</u>	<u>0</u>	<u>50</u>	<u>50</u>

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<u>Constructed Wetland 2</u>	<u>0</u>	<u>75</u>	<u>75</u>
<u>Wet Pond 1</u>	<u>0</u>	<u>50</u>	<u>50</u>
<u>Wet Pond 2</u>	<u>0</u>	<u>75</u>	<u>75</u>

**4VAC 50-60-66 Water Quantity**

Properties, state waters, and stormwater conveyances within or downstream of a land disturbing activity shall be protected from sediment deposition, erosion and flood damage due to unmanaged quantity of stormwater and changes in runoff characteristics. Water quantity from land disturbing activities for channel protection and flood protection shall be managed in accordance with the minimum standards set out in this section, which are established pursuant to the requirements of §10.1-603.4(7).

A. Channel protection. One of the following criteria shall be met:

1. Discharges to man-made stormwater conveyance systems. The point of discharge releases stormwater into a man-made stormwater conveyance system that, following the land disturbing activity, conveys the post-development peak flow rate from the 2-year 24-hour storm without causing erosion of the system. The applicant must demonstrate, using accepted hydrologic and hydraulic design methodologies, that the runoff following the land disturbing activity, in combination with other existing stormwater runoff, consistent with applicable design criteria, does not exceed these criteria.

2. Discharges to restored stormwater conveyance systems. The point of discharge releases stormwater into a restored stormwater conveyance system that (i) is functioning as designed or (ii) will be further restored using natural channel design concepts. The applicant must demonstrate, using accepted hydrologic and hydraulic design methodologies, that the runoff following the land disturbing activity, in combination with other existing stormwater runoff, will not exceed the design of the restored stormwater conveyance system nor result in instability of the system.

3. Discharges to natural stormwater conveyance systems. The point of discharge releases stormwater into a natural stormwater conveyance system that is stable and, following the land disturbing activity, (i) confines the post-development peak flow rate from the 10-year 24-hour storm within the stormwater conveyance system, (ii) will not become unstable, and (iii) provides a peak flow rate from the one-year 24 hour storm calculated as follows or in accordance with another methodology that is demonstrated to achieve equivalent results and is approved by the board:

$$Q_{\text{Developed}} * RV_{\text{Developed}} \leq Q_{\text{Pre-Developed}} * RV_{\text{Pre-Developed}}, \text{ where}$$

$$Q_{\text{Developed}} = \frac{\text{The allowable peak flow rate of runoff from the developed site}}{\text{site}}$$

$$Q_{\text{Pre-Developed}} = \frac{\text{The peak flow rate of runoff from the site in the pre-developed condition}}{\text{developed condition}}$$

$$RV_{\text{Pre-Developed}} = \frac{\text{The volume of runoff from the site in the pre-developed condition}}{\text{condition}}$$

$$RV_{\text{Developed}} = \frac{\text{The volume of runoff from the site in the developed site}}{\text{developed site}}$$

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4. Stormwater runoff from a land disturbing activity shall be released from each point of discharge into a channel at or below a peak flow rate ( $Q_{\text{Developed}}$ ) based on the one year 24-hour storm, calculated as follows or in accordance with another methodology that is demonstrated to achieve equivalent results and is approved by the board:

$$Q_{\text{Developed}} * RV_{\text{Developed}} \leq Q_{\text{Forested}} * RV_{\text{Forested}}, \text{ where}$$

$Q_{\text{Developed}}$  = The allowable peak flow rate from the developed site

$Q_{\text{Forested}}$  = The peak flow rate from the site in a forested condition

$RV_{\text{Forested}}$  = The volume of runoff from the site in a forested condition

$RV_{\text{Developed}}$  = The volume of runoff from the developed site

B. Flood protection. One of the following criteria shall be met:

1. Discharges to man-made stormwater conveyance systems. The point of discharge releases stormwater into a man-made stormwater conveyance system that, following the land disturbing activity, confines the post-development peak flow rate from the 10-year 24-hour storm within the man-made stormwater conveyance system. The applicant must demonstrate, using accepted hydrologic and hydraulic design methodologies, that the runoff following the land disturbing activity, in combination with other existing stormwater runoff, consistent with applicable design criteria, does not exceed these criteria.

2. Discharges to restored stormwater conveyance systems. The point of discharge releases stormwater into a restored stormwater conveyance system that (i) is functioning as designed or (ii) will be further restored using natural channel design concepts. The applicant must demonstrate, using accepted hydrologic and hydraulic design methodologies, that the peak flow rate from the 10-year 24-hour storm following the land disturbing activity will be confined within the system.

3. Discharges to natural stormwater conveyance systems. The point of discharge releases stormwater into a natural stormwater conveyance system that is stable and, following the land disturbing activity, confines the post-development peak flow rate from the 10-year 24-hour storm within the stormwater conveyance system.

4. The post-developed peak flow rate from the 10-year 24-hour storm shall not exceed the pre-developed peak flow rate from the 10-year 24-hour storm. A local program may adopt alternate flood protection design criteria that (i) achieves equivalent results, (ii) is based upon geographic, land use, topographic, geologic or other downstream conveyance factors, and (iii) is approved by the board.

C. One percent rule. If the following criteria is met, subsections A and B do not apply:

a. Based on area. Prior to any land disturbance, the site's contributing drainage area to a point of discharge from the site is less than or equal to one (1) percent of the total watershed area draining to that point of discharge; or

b. Based on discharge. Based on the post-development land cover conditions prior to the implementation of any stormwater quantity control measures, the development of the site results in an increase in the peak flow rate from the one-year 24-hour storm that is less than one (1)

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percent of the existing peak flow rate from the one-year 24-hour storm generated by the total watershed area draining to that point of discharge.

D. Increased volumes of sheet flow resulting from pervious or disconnected impervious areas, or from physical spreading of concentrated flow through level spreaders, must be identified and evaluated for potential impacts on down gradient properties or resources. Increased volumes of sheet flow that will cause or contribute to erosion, sedimentation or flooding of down gradient properties or resources shall be diverted to a detention facility or a stormwater conveyance system that conveys the runoff without causing down gradient erosion, sedimentation or flooding. If all runoff from the site is sheet flow and the conditions of this subsection are met, no further water quantity controls are required.

E. For purposes of computing predevelopment runoff from prior developed sites, all pervious lands on the site shall be assumed to be in good hydrologic condition in accordance with NRCS standards, regardless of conditions existing at the time of computation. Predevelopment runoff calculations utilizing other hydrologic conditions may be utilized provided that it is demonstrated to and approved by the local program authority that actual site conditions warrant such considerations.

F. Pre-development runoff characteristics and site hydrology shall be verified by site inspections, topographic surveys, available soil mapping or studies, and calculations consistent with good engineering practices in accordance with guidance provided in the Virginia Stormwater Management Handbook and by the qualifying local program.

G. Flooding and channel erosion impacts to stormwater conveyance systems shall be analyzed for each point of discharge (i) to a point that is at least 150 feet (46 meters) downstream of a point where the stormwater conveyance system is joined by another that has a drainage area that is at least 90% of the size of the first drainage area at the point of confluence, or (ii) to a point that is at least 150 feet (46 meters) downstream of a point where the drainage area is 360 acres (1.46 km<sup>2</sup>) or greater. Such analysis shall include estimates of runoff from the developed site and the entire upstream watershed which contributes to that point of discharge. Good engineering practices and calculations in accordance with DCR guidance shall be used to evaluate post development runoff characteristics and site hydrology, and flooding and channel erosion impacts.

H. Quantity control for redevelopment projects.

1. Projects occurring on prior developed lands that increase the amount of impervious cover on the site shall comply with the requirements of this section.

2. Projects occurring on prior developed lands that do not increase the amount of impervious cover on the site shall reduce the peak flow rate as follows:

a. For flood control, the peak flow rate shall be reduced by 10 percent for the 10-year 24 hour storm event;

b. For channel protection, the peak flow rate shall be reduced by 10 percent for the one-year 24 hour storm event if discharging to a natural or restored stormwater conveyance system, or, for the two-year 24 hour storm event if discharging to a man-made stormwater conveyance system.

**4VAC50-60-70. Stream channel erosion. Repeal**

**4VAC50-60-72. Design Storms and Hydrologic Methods**

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Unless otherwise specified, the prescribed design storms are the 1-year, 2-year, and 10-year 24-hour storms using the site-specific rainfall precipitation frequency data recommended by the U.S. National Oceanic and Atmospheric Administration (NOAA) Atlas 14. Partial duration time series shall be used for the precipitation data. All hydrologic analyses shall be based on the existing watershed characteristics and the ultimate development condition of the subject project. The U.S. Department of Agriculture's Natural Resources Conservation Service (NRCS) synthetic 24-hour rainfall distribution, hydrologic and hydraulic methods developed by the U.S. Army Corps of Engineers, or other standard hydrologic and hydraulic methods, shall be used to conduct the analyses described in this Part. The local program may allow for the use of the Rational Method or Modified Rational Method for evaluating peak discharges to man-made conveyances.

### **4VAC50-60-74. Stormwater harvesting**

Stormwater harvesting for uses other than potable water is encouraged in order to protect state waters and the public health and to minimize the direct discharge of pollutants into state waters in accordance with § 10.1-603.4 of the Code of Virginia. Stormwater harvesting is encouraged for the purposes of landscape irrigation systems, fire protection systems, flushing water closets and urinals, and other water handling systems to the extent such systems are feasible, reasonable, and consistent with federal, state and local regulatory authorities. Where deemed appropriate for use, designs shall be in accordance with the Stormwater Management Handbook or the BMP Clearinghouse.

### **4VAC50-60-76. Linear development projects**

Unless exempt pursuant to §10.1-603.8 subsection B, linear development projects shall control post-development stormwater runoff in accordance with a site-specific stormwater management plan or a comprehensive watershed stormwater management plan developed in accordance with these regulations.

Standards for VDOT projects to be determined

### **4VAC50-60-80. Flooding. Repeal**

### **4VAC50-60-85. Stormwater management impoundment structures or facilities**

A. Construction of stormwater management impoundment structures or facilities within tidal or nontidal wetlands and perennial streams is prohibited unless allowed by the local program and all required permits are obtained.

B. Construction of stormwater management impoundment structures or facilities within a Federal Emergency Management Agency (FEMA) designated 100-year floodplain should be avoided. When this is demonstrated to be unavoidable, all stormwater management facility construction shall be in compliance with all applicable requirements under the National Flood Insurance Program, 44 CFR Part 59 and local floodplain ordinances.

C. Stormwater management impoundment structures that are not covered by the Impounding Structure Regulations (4VAC50-20) shall be engineered for structural integrity and spillway design for the 100-year storm event. In no case shall the design standard be less than the 100-year storm event for any stormwater management impoundment structure.

D. Construction of stormwater management impoundment structures or facilities may occur in karst areas only after a geological study of the area has been conducted to determine the

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presence or absence of karst features that may be impacted by stormwater runoff and BMP placement.

E. Discharge of stormwater runoff to a karst feature shall meet the water quality criteria set out in 4 VAC 50-60-63 and the water quantity criteria set out in 4 VAC 50-60-66. Permanent stormwater management impoundment structures or facilities shall only be constructed in karst features after completion of a geotechnical investigation that identifies any necessary modifications to the BMP to ensure its structural integrity and maintain its water quality and quantity efficiencies. The person responsible for the land disturbing activity is encouraged to screen for known existence of heritage resources in the karst features. Any Class V Underground Injection Control Well registration statements for stormwater discharges to improved sinkholes shall be included in the SWPPP.

**4VAC50-60-90. Regional (watershed-wide) stormwater management plans.** Repeal

### **4VAC50-60-93. Stormwater Management Plan Development**

A. A stormwater management plan for a land disturbing activity shall apply these stormwater management technical criteria to the entire land disturbing activity.

B. Individual lots or planned phases of developments shall not be considered separate land-disturbing activities, but rather the entire development shall be considered a single land disturbing activity.

C. The stormwater management plan shall consider all sources of surface runoff and all sources of subsurface and groundwater flows converted to surface runoff.

### **4VAC50-60-96. Comprehensive watershed stormwater management plans**

A. Local programs may develop comprehensive watershed stormwater management plans to be approved by the board that meet the water quality objectives, quantity objectives, or both of this chapter. Such plans shall ensure that offsite reductions equal to or greater than those that would be required on each contributing land disturbing site are achieved within the same HUC, or within HUCs approved by the board. State and federal agencies intending to develop large tracts of land may develop or participate in comprehensive watershed stormwater management plans where practicable. The local program shall document nutrient reductions achieved during the plan's implementation. Pertaining to water quantity objectives, the plan may provide for implementation of a combination of channel improvement, stormwater detention, or other measures which is satisfactory to the local program to prevent downstream erosion and flooding. If the land use assumptions upon which the plan was based changes or if any other amendments are deemed necessary by the local program, the local program shall provide plan amendments to the board for review and approval.

B. If the local program allows for a pro rata fee in accordance with § 15.2-2243 of the Code of Virginia, then the reductions required for a site by this chapter may be achieved by the payment of a pro rata fee sufficient to fund improvements necessary to adequately achieve those requirements in accordance with that section of the Code and this chapter.

### **Documents Incorporated by Reference**

Pollutant - Runoff Reduction Spreadsheet contained within the Virginia Stormwater Management Handbook